

Serial No. 09/846,044, filed 5/1/01

IN THE SPECIFICATION:

Please amend the Specification as follows:

[5] The present invention provides a regulator assembly that may be used as part of a door module. Attachment of the regulator components to the a panel provides a convenient door module for attachment to a door. The regulator assembly may also be used for sunroofs. The assembly includes a glass support member for supporting a pane of glass or window. A drive motor produces a drive force for moving the glass support member between open and closed positions. A flexible belt, such as a timing belt, includes a profile. The belt interconnects the drive motor and the glass support member. In a preferred embodiment, spaced apart brackets may be connected to a panel for supporting opposing end portions of the belt. A drive pulley has a complimentary profile to the profile of the belt. The drive pulley is connected to the drive motor with the drive pulley engaging the belt and movable relative thereto in response to the drive force. The regulator assembly may incorporate a continuous loop belt or a belt having terminal ends that are affixed to a mounting member.

[12] The present invention regulator assembly 10 is shown in Figure 1. Preferably, the regulator assembly 10 makes up a door module that may be secured to a door as a unit. With a door module embodiment, the regulator assembly 10 may include a panel 12. The regulator assembly 10 may also be used for sunroof applications. Spaced guides 14 support a glass support member 17 to which a window or glass pane W is secured. The guides 14 may include a rail 15 and follower 16 secured to the glass

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support member 17 for guiding the glass support member members 17 along the rails 15.

A flexible profile belt 18 is connected to the glass support member 17. The belt 18 includes opposing end portions 20. In one embodiment, shown in Figures 1 and 2, the belt 18 is supported at opposing end portions 20 by a support pulley 22 and a drive pulley 30. The support pulley 22 is connected to an upper bracket 24, which is secured to the panel 12. A drive motor 26 is connected to the drive pulley 30 and is supported by lower bracket 28, which is secured to the panel 12. The drive motor 26 provides a drive force for rotatingly driving the drive pulley 30 and moving the belt 18 relative to the drive pulley 30 to move the glass support member 17 between closed C, and opened O positions. The opened O and closed C positions are defined by stops 32, which may be secured to the brackets 24 and 28.

[13] A rod 34 may be connected to the brackets 24 and 28 for maintaining a distance between the pulleys 22 and 30 during installation. The rod 34 ensures that the belt 18 and drive pulley 30 remain in engagement with one another. However, if the panel 12 is used, the rod 34 may not be needed since the brackets 24 and 28 may be secured to the panel 12 prior to installation of the regulator assembly 10 to the door or other appropriate vehicle structure. If a panel 12 is not used, it may be more convenient to utilize the rod 34 between the brackets 24 and 28 to aid in installation of the regulator assembly 10 to the door.

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[15] In the most preferred embodiment of the invention, the drive pulley 30 is a timing pulley, and the flexible belt 18 is a timing belt. For this type of belt and pulley arrangement, the belt and pulleys have complimentary profiles (46,42) that interlock with one another. The drive pulley 30 includes spaced apart flanges 40 that ensure that the belt 18 does not slide from the drive pulley 30 as they move relative to one another. The drive pulley 30 includes a profile 42 having teeth arranged radially about the pulley. The belt 18 is preferably constructed from a rubberized fabric with embedded steel wires or other reinforcing members to maintain the structural integrity of the belt 18 under a variety of temperature and stress conditions. The regulator assembly 10 of the present invention is especially desirable since a wide range of the belts 18 are presently commercially available. Furthermore, the timing such belts 18 are highly durable and resistant to stretching. Moreover, the interlocking profiles 42 and 46 prevent slippage of the belt 18 relative to the drive pulley 30.

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